FILTER DATA SHEET

No.	Ву	Chk	Арр	Date	Description	Doc. No	.: DS-1813-01	Rev.: 1
1	СН	CS	ТВ	6/13/19	Incorporated Design Changes for 100%	Project Name:	TSCR	
						Project Number:	18-13	/\ A\/ANITooh
						Location:	Richland, WA	AVANTech
						Tag: POR655-WP-FLT-325A/B		

					Tag: POR655-WP-FLT-	325A/B				
				DESIGN / OPE	RATING REQUIREMEN	ITS				
1	Service : Pressur	e Vessel, Code Stamped		-	Process Conten	ts: Dilute Caus	tic and Water, Filtered So	lids, Treated Proces	s Water, Waste Feed	
2	Design Press. @ Temp Internal (at top): 400 psig) psig @	180 °F	°F Δ P Across Internals: Note 1			ote 1 psi	
3	Design Press. @ Temp External: Full Vacuum psig @				180 °F	S. G of Process Fluid: 1.27				
4	Min. Design Metal Temper	rature (MDMT):	-20) °F @	448 psig		Design Liquid Level: 100%			
5	Operating Pressure - Inter	nal:	120) psig @	77 °F	Head Joint Efficiency: 0.7				
6 Min. Operating Temperature: 60 °F @ 108 psig							Shell Joint Effi	iciency: 0.7		
7	MAWP Basis: 448 psi in RPP-CALC-62472									
8	Corrosion Allowance: Yes (0.2 MILS per Year), See Note Shell and Heads: 0.001 In. Nozzles: 0.001 In. Internals: 0.001 In.									
9	Cyclic Service: Yes, See	e Note 2		Lethal	Service: N/A Code Case(s): 2732-1					
10	Construction Code: ASME B&PV Section VIII, Div. 1, 2017 Edition Design Life: 5 years Stamping: Yes								ing: Yes	
11	National Board Registration : Yes Lethal Stamp: N/A									
12	Capacity (Cavity Volume):	Full:	49.5	Gal.	Operating:	49.5 Gal.				
13	Wind: N/A Exposure: N/A			Basic V	Wind Speed: N/A Importance Fa			Factor: N/A		
14	Seismic: SDC-2, I	LS-C	Imp	ortance Factor:	1.5		Soil Profil	e Type: Site Class D		
	-			INSPECT	TION AND TESTING					
15	Radiography: RPP-SPE	EC-61910			Ultrason	ic: RPP-SPEC-6	1910			
16		N/A			Charpy Impact:		Per ASME Code	at	-20 °F	
17		RPP-SPEC-61910				ss: RPP-SPEC-6		at .		
18	<u>'</u>	585 psi @ 1 Hour					1910 (Corroded)			
19	Min. Hydrotest Temperatu		32	2 °F	r ded e r reid rei	30. 10. 10. 10. 0	1310 (00110404)			
13	Willia Hydrocese Temperace				FICATIONS AND STAN	DARDS				
			API	PLICABLE SPECI	FICATIONS AND STAN	DARDS				
20	· ·	EC-61910								
21	,	l Service								
22		&PV Section VIII, Div. 1, 201	7 Edition & ASTM	B29 for Lead Sh	nielding Acceptance Te	sting				
23	Drawings: H-14-11	l1251, H-14-111256								
				ı	MATERIALS					
	Non-Pressure Parts									
							Non-Pressure Parts	s		
		Pressure Parts				Extern			Internal	
24		N/A			SA240 304/304L		pal	SA240 316/		
24 25	Forgings:	N/A SA182 F316/316L, SA403 W	/P316/316L		SA182 F316/316L, SA4		pal	SA240 316/ N/A		
	Forgings: Pipe & Tube:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L	/P316/316L		SA182 F316/316L, SA4 SA312 TP316/316L		pal	SA240 316/ N/A N/A		
25 26 27	Forgings: Pipe & Tube: Bolts & Studs:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A	/P316/316L		SA182 F316/316L, SA4 SA312 TP316/316L N/A		pal	SA240 316/ N/A N/A N/A		
25 26 27	Forgings: Pipe & Tube: Bolts & Studs: Nuts:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A	/P316/316L		SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A		pal	SA240 316/ N/A N/A N/A N/A		
25 26 27	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A			SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L	403 WP316/316	oal GL	SA240 316/ N/A N/A N/A N/A N/A		
26 27 28	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W			SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4	403 WP316/310 403 WP316/310	oal GL	SA240 316/ N/A N/A N/A N/A N/A		
25 26 27 28 29	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A			SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L	403 WP316/310 403 WP316/310	oal GL	SA240 316/ N/A N/A N/A N/A N/A N/A		
25 26 27 28 29 30	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W			SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4	403 WP316/310 403 WP316/310 76 304/304L	SL SL	SA240 316/ N/A N/A N/A N/A N/A		
25 26 27 28 29 30 31	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A		F	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27	403 WP316/310 403 WP316/310 76 304/304L	SL SL	SA240 316/ N/A N/A N/A N/A N/A N/A		
25 26 27 28 29 30 31	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A		F	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6L , ASTM B29	SA240 316/ N/A N/A N/A N/A N/A N/A		
25 26 27 28 29 30 31 32	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A R/P-SF	/P316/316L	F	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6L , ASTM B29	SA240 316/ N/A N/A N/A N/A N/A N/A	Yes	
25 26 27 28 29 30 31 32	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A R/P-SF	/P316/316L PEC-61910	F	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6L , ASTM B29	SA240 316/ N/A N/A N/A N/A N/A N/A	Yes	
25 26 27 28 29 30 31 32 33 34	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A R/P-SF T: RPP-SF	/P316/316L PEC-61910	F	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6L , ASTM B29	SA240 316/ N/A N/A N/A N/A N/A N/A	Yes	
25 26 27 28 29 30 31 32 33 34 35	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A R/A R/P-SF T: RPP-SF	/P316/316L PEC-61910	F	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6L , ASTM B29	SA240 316/ N/A N/A N/A N/A N/A N/A	Yes	
25 26 27 28 29 30 31 32 33 34 35 36	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A RPP-SF N/A RPP-SPEC-61910	/P316/316L PEC-61910		SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6L , ASTM B29	SA240 316/ N/A N/A N/A N/A N/A N/A	Yes	
25 26 27 28 29 30 31 32 33 34 35 36	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A RPP-SF N/A RPP-SPEC-61910	/P316/316L PEC-61910	АРР	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Pai	403 WP316/310 403 WP316/310 76 304/304L	6L 6L ASTM B29 Boundary:	SA240 316/ N/A N/A N/A N/A N/A N/A	Yes	
25 26 27 28 29 30 31 32 33 34 35 36 37	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A PRP-SF N/A RPP-SF RPP-SF RPP-SF RPP-SF RPP-SF RPP-SF RPP-SF RPP-SF RPP-SF	/P316/316L PEC-61910	АРР	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Part PWHT Basis:	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6SE 6ASTM B29 Boundary:	SA240 316/ N/A N/A N/A N/A N/A N/A N/A	Yes	
25 26 27 28 29 30 31 32 33 34 35 36 37	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating: Lifting Lugs: See H-1	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A RPP-SF N/A RPP-SPEC-61910 RPP-SPEC-61910 4-111251, H-14-111256	PEC-61910 PEC-61910	APF Tai Pipe Supports /	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Part PWHT Basis:	403 WP316/310 403 WP316/310 76 304/304L	6L 6L 6SE 6ASTM B29 Boundary:	SA240 316/ N/A N/A N/A N/A N/A N/A N/A N/	Yes	
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating: Lifting Lugs: See H-1 Ladder and Platforms:	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A RPP-SF N/A RPP-SPEC-61910 RPP-SPEC-61910 4-111251, H-14-111256 N/A	PEC-61910 PEC-61910 : N/	APF Tai Pipe Supports /	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Pal PWHT Basis: PURTENANCES illing Lug: N/A / Guides: N/A	403 WP316/310 403 WP316/310 76 304/304L H Top Shielding rts to Pressure	6L 6L 6SE 6ASTM B29 Boundary:	SA240 316/ N/A N/A N/A N/A N/A N/A N/A N/A	Yes Per ASME Code	
25 26 27 28 29 30 31 32 33 34 35 36 37	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating: Lifting Lugs: See H-1 Ladder and Platforms: Insulation: N/A	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A RPP-SF N/A RPP-SF RPP-SF N/A RPP-SPEC-61910 RPP-SPEC-61910 4-111251, H-14-111256 N/A Thk	PEC-61910 PEC-61910 : N/	APF Tai Pipe Supports / 'A	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Pail PWHT Basis: PURTENANCES Illing Lug: N/A Guides: N/A Density: Density:	403 WP316/310 403 WP316/310 76 304/304L 1 Top Shielding rts to Pressure N/A N/A	6L 6L 6SE 6ASTM B29 Boundary:	SA240 316/ N/A N/A N/A N/A N/A N/A N/A N/	Yes Per ASME Code	
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating: Lifting Lugs: See H-1 Ladder and Platforms: Insulation: N/A Fireproofing: N/A	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A Prements: RPP-SF T: RPP-SF N/A RPP-SPEC-61910 RPP-SPEC-61910 4-111251, H-14-111256 N/A Thk Thk	PEC-61910 PEC-61910 : N/ PRELII	APF Tai Pipe Supports / 'A 'A MINARY LOADS	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Path PWHT Basis: PURTENANCES iling Lug: N/A Guides: N/A Density: Density:	N/A N/A N/A SY SELLER)	GL GL Boundary: Gro	SA240 316/ N/A N/A N/A N/A N/A N/A N/A N/	Yes Per ASME Code N/A N/A	
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating: Lifting Lugs: See H-1 Ladder and Platforms: Insulation: N/A Fireproofing: N/A	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A RPP-SF T: RPP-SF N/A RPP-SPEC-61910 RPP-SPEC-61910 4-111251, H-14-111256 N/A Thk Thk Shipping: 7,900	PEC-61910 PEC-61910 N/ PRELII	APF Tai Pipe Supports / 'A	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Part PWHT Basis: PURTENANCES Illing Lug: N/A Guides: N/A Density: Density: 5 (TO BE CONFIRMED B	N/A N/A N/A SY SELLER)	GL GL GL GL GROWN Grown Operating: 8,3	SA240 316/ N/A N/A N/A N/A N/A N/A N/A N/	Yes Per ASME Code	
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	Forgings: Pipe & Tube: Bolts & Studs: Nuts: Rod & Bar: Weld Fittings: Structural Shapes: Shielding: Weld Pressure Joint Requi Post Weld Heat Treatment Internal Coating: Surface Preparation: External Coating: Lifting Lugs: See H-1 Ladder and Platforms: Insulation: N/A Fireproofing: N/A	N/A SA182 F316/316L, SA403 W SA312 TP316/316L N/A N/A N/A SA182 F316/316L, SA403 W N/A N/A N/A RPP-SF N/A RPP-SPEC-61910 RPP-SPEC-61910 4-111251, H-14-111256 N/A Thk Thk Shipping: 7,900 Shear at Base =	PEC-61910 PEC-61910 : N/ PRELII	APF Tai Pipe Supports / 'A 'A MINARY LOADS	SA182 F316/316L, SA4 SA312 TP316/316L N/A N/A SA276 304/304L SA182 F316/316L, SA4 SA240 304/304L, SA27 Cast Lead for Side and ABRICATION Seal Weld Internal Path PWHT Basis: PURTENANCES iling Lug: N/A Guides: N/A Density: Density:	N/A N/A N/A SY SELLER)	Operating: 8,3	SA240 316/ N/A N/A N/A N/A N/A N/A N/A N/	Yes Per ASME Code N/A N/A	

FILTER DATA SHEET

No.	Ву	Chk	Арр	Date	Description	Doc. No	.: DS-1813-01	Rev.: 1
1	СН	CS	ТВ	6/13/19	Incorporated Design Changes for 100%	Project Name:	TSCR	
						Project Number:	18-13	/\ A\/ANITooh
						Location:	Richland, WA	AVANTech
						Tag: POR655-WP-FLT-325A/B		

Filter Design Parameters:

Flowrate: 5 GPM

Particle Size Removal: 99.9%, > 13 micron , 99% > 8 micron

Pressure Drop (Clean) = < 1 psi Pressure Drop (Dirty) = 2 psi

1. Design Pressure Drop = 5 psi

2. Cyclic Loading of Filter

	Min	Max	Frequency / Design Life
Design Pressure	0 psig	400 psig	5
Operating Pressure	0 psig	120 psig	1800
Operating Temperature	60 F	95 F	1800
Contents Specific Gravity	1.0	1.35	-

3. Pressure Vessel is designated as Non-Corrosive Service. A corrosion allowance of 0.001" is maintained for the vessel and nozzle walls.